



>>Entry Name: Copper cyanide, 9CI  
Synonym(s): Cuprous cyanide. Cupricin

CAS Registry Number: 544-92-3

CuCN

Molecular Formula: CCuN

Molecular Weight: 89.564

Accurate Mass: 88.942672

Percentage Composition: C 13.41%; Cu 70.95%; N 15.64%

Use/Importance: Insecticide, fungicide. Used in synth. of aryl cyanides from diazonium salts. Catalyses addn. of dialkyl(dimethylphenylsilyl)zinc lithium to acetylenes.

Reagent in prep. of acyl trimethylsilanes from carboxylic acid derivs. Catalyses allylation of zinc esters. Precursor to organocopper and organocuprate reagents

Physical Description: White-cream powder, dark green orthorhombic cryst. or dark red monoclinic cryst.

Melting Point: Mp 474°

Solubility: Sol. NH<sub>3</sub> aq.; insol. H<sub>2</sub>O, alcohols

Other Data: Forms complexes with variety of N-donor ligands

**Hazard & Toxicity: Poisonous**

Aldrich: 45591-1

Fluka: 61176

Sigma: C1547

#### References:

- Aldrich Library of FT-IR Spectra*, 1st edn., 1985, **2**, 1251A, (ir)  
Barber, H.J., *J.C.S.*, 1943, **79**, (synth)  
Norberg, B. *et al.*, *Acta Chem. Scand.*, 1949, **3**, 174, (synth)  
Vaughan, W.R. *et al.*, *J.A.C.S.*, 1954, **76**, 2504, (use)  
Penneman, R.A. *et al.*, *J. Chem. Phys.*, 1956, **24**, 293, (ir)  
Cromer, D.T. *et al.*, *Anal. Chem.*, 1957, **29**, 315  
Cromer, D.T. *et al.*, *Acta Cryst.*, 1965, **19**, 192, (reactions)  
Chadwick, B.M. *et al.*, *Adv. Inorg. Chem. Radiochem.*, 1966, **8**, 153, (rev, synth)  
Sharpe, A.G., *The Chemistry of Cyano Complexes of the Transition Metals*, Interscience, New York, 1976, 266  
Stansfield, F., *J.C.S. Perkin I*, 1984, 2933  
Terashima, M. *et al.*, *Heterocycles*, 1985, **23**, 117, (use)  
Okuda, Y. *et al.*, *Tet. Lett.*, 1985, **26**, 4629, (use)  
Knochel, P. *et al.*, *Tet. Lett.*, 1986, **27**, 4427; 4431, (use)  
Ochiai, H. *et al.*, *J.O.C.*, 1987, **52**, 4418, (use)  
Lipshutz, B.H. *et al.*, *Tet. Lett.*, 1987, **28**, 945, (use)  
Kang, J. *et al.*, *Tet. Lett.*, 1987, **28**, 3261, (use)  
Raper, E.S. *et al.*, *Inorg. Chim. Acta*, 1989, **155**, 77, (reactions)  
*Encyclopaedia of Reagents for Organic Synthesis*, (ed. Paquette, L.A.), Wiley, 1995, **2**, 1341, (use)  
Lewis, R.J., *Sax's Dangerous Properties of Industrial Materials*, 8th edn., Van Nostrand Reinhold, 1992, CNL000